Coastal Community Flood Resilience Planning Workshop

Applying CHARM and No Adverse Impact

St. Augustine, Florida
Guana Tolomato Matanzas National Estuarine Research Reserve
October 10, 2018

Agenda

9:00	**Introductions, Overview & No Adverse Impact Approach** *Jeff Stone, GISP, CFM – Sr. Research Manager, Association of State Floodplain Managers*
9:30	**Flood Resilience Planning in St. Augustine** *Todd Grant, P.G. – Public Works Deputy Director, St. Augustine*
9:45	**Planning for Sea Level Rise in the Matanzas Basin** *Kaitlyn Dietz – Coastal Training Program Coordinator,* *Guana Tolomato Matanzas National Estuarine Research Reserve*
10:00	**The Law's the Limit: Sea-Level Rise Adaptation and Local Government** *Thomas Ruppert, Esquire – Coastal Planning Specialist, Florida Sea Grant*
10:45	Break
11:00	**Adaptation Planning – Ideas from Annapolis** *Angela Schedel, Ph.D., P.E. – Director of Community Resilience, Taylor Engineering*
11:30	**Peril of Flood & Post-Disaster Redevelopment Plans** *Jerry Murphy, JD, AICP, CFM – Resilient Communities Initiative, University of Florida*
Noon	**Lunch**
12:45 PM	**Community, Health and Resource Management (CHARM) Overview** *Steven Mikulencak, AICP – Planning Program Leader, Texas Community Watershed Partners, Texas A&M AgriLife Extension*
1:00	**CHARM Scenario Planning** Group breakout exercises & discussion
3:50	Closing Remarks, Additional Resources and Workshop Evaluation
4:00 PM	Adjourn

TEXAS COMMUNITY WATERSHED PARTNERS

CITY OF ST AUGUSTINE EST. 1565

GTM RESEARCH RESERVE COASTAL TRAINING PROGRAM

FLORIDA FLOODPLAIN MANAGERS ASSOCIATION FL FLOODS

FEMA

ASFPM Mission



Fort Lauderdale, King Tides of October 17-18, 2016. Image Credit: NOAA

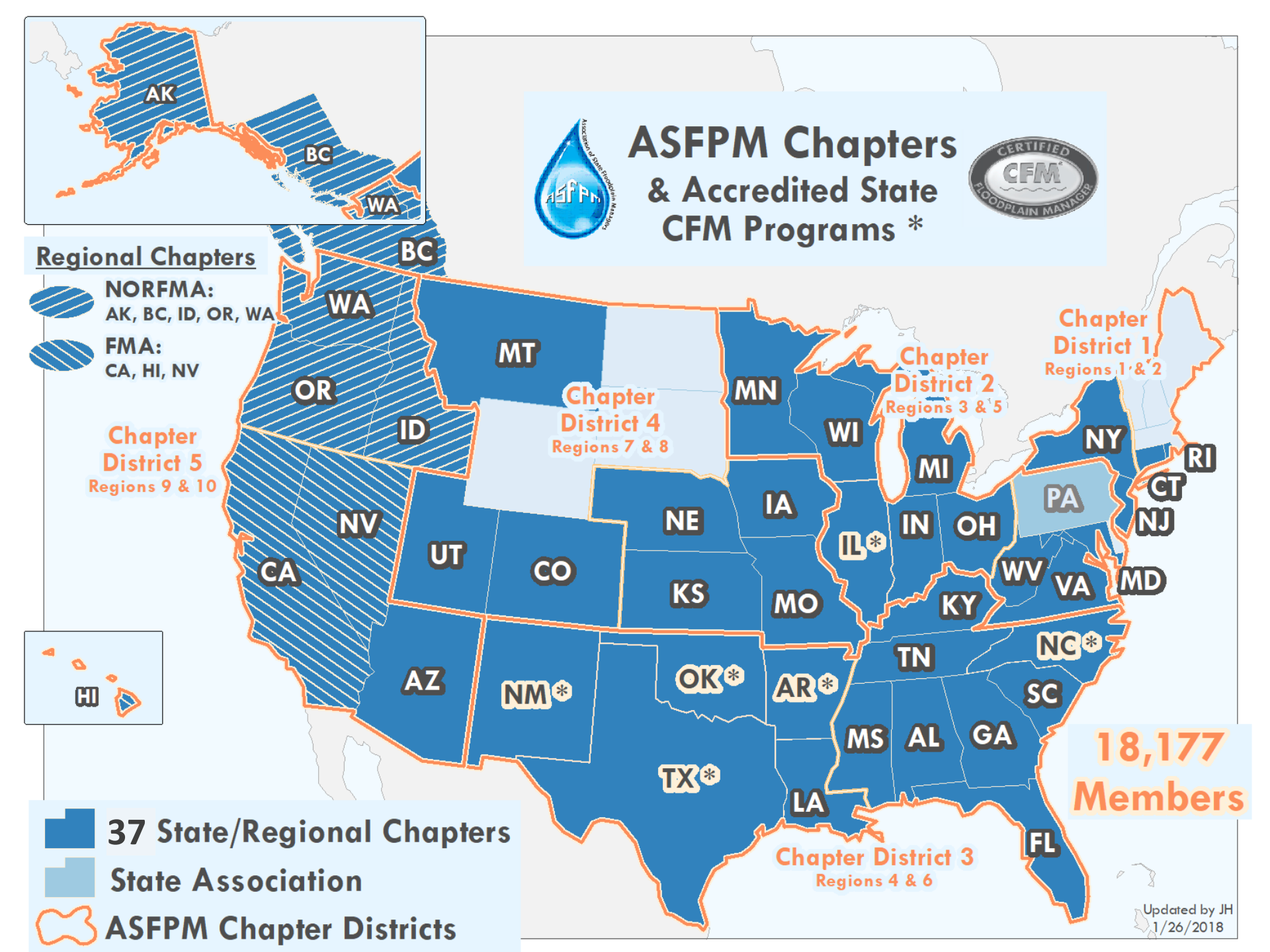


Natural "green barriers" help protect this Florida coastline and infrastructure from severe storms and floods. Credit: NOAA

Reduce the losses, costs, and human suffering caused by flooding

and…

Protect the natural and beneficial functions of floodplains without impacting the property rights of others.


ASFPM Chapters
& Accredited State
CFM Programs *
CERTIFIED CFM FLOODPLAIN MANAGER
Regional Chapters
NORFMA:
AK, BC, ID, OR, WA
FMA:
CA, HI, NV
AK
BC
WA
OR
ID
MT
Chapter District 4
Regions 7 & 8
Chapter District 5
Regions 9 & 10
NV
CA
UT
CO
AZ
NM*
NE
KS
OK*
TX*
IA
MO
AR*
LA
MN
WI
IL*
MI
IN
OH
KY
TN
MS
AL
GA
SC
NC*
FL
WV
VA
PA
NY
MD
NJ
CT
RI
Chapter District 1
Regions 1 & 2
Chapter District 2
Regions 3 & 5
Chapter District 3
Regions 4 & 6
HI
18,177 Members
37 State/Regional Chapters
State Association
ASFPM Chapter Districts
Updated by JH
1/26/2018

National, state and local

Digital Coast Partnership

- NOAA, APA, CSO, NACo, NERRA, NSGIC, TNC, ULI

American Planning Association (APA)

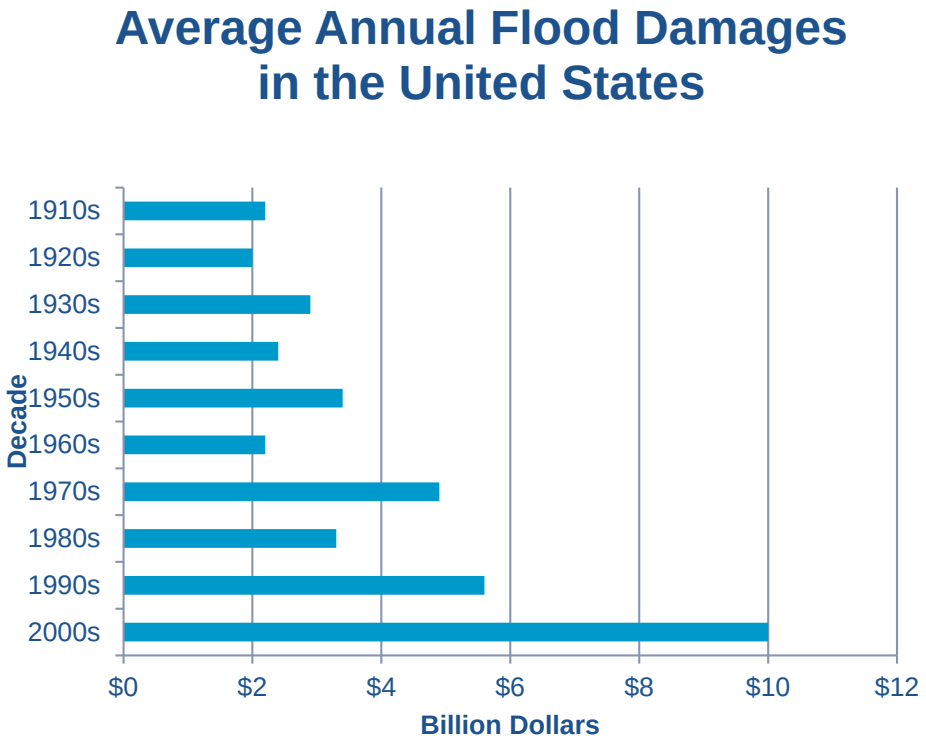
- Planning Information Exchange (PIE) Webinars
- PAS Reports – Subdivision Design, Capital Infrastructure Planning

Florida Floodplain Management Association

- Training, committees & resources



Flooding Costs



Source: NOAA NWS, Hydrologic Information Center (www.nws.noaa.gov/hic/)

- # 1 natural hazard in U.S.
- $5.4 billion damages annually
- $7.96 billion annual average in last 30 years
  - And then there was Sandy, Harvey, Irma, Maria, Florence, Michael
- More than 50% of properties in high-risk areas do not have flood insurance
- 25% of flood claims outside SFHA

Map the Nation

ASFPM estimate for adequate flood mapping for the nation

- **$4.5 billion to $7.5 billion**

Annual maintenance

- **$116 million to $275 million**

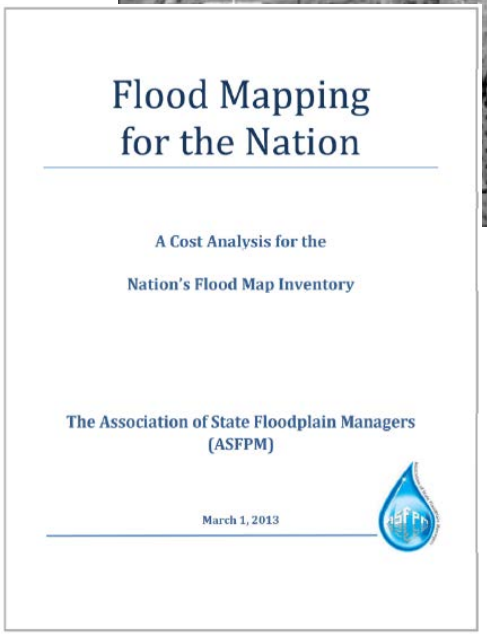
Nation has invested

- **$4.3 billion**

Taxpayer benefit

- **$2 for every $1 invested in flood mapping** (FEMA, 1997)





Flood Mapping for the Nation

A Cost Analysis for the Nation's Flood Map Inventory

The Association of State Floodplain Managers (ASFPM)

March 1, 2013

Prevention Saves

Natural Hazard Mitigation Saves: 2017 Interim Report (NIBS, 2017)

Federal Grants Provide $6 Benefit for Each $1 Invested

National Benefit-Cost Ratio Per Peril *BCR numbers in this study have been rounded	Federally Funded	Beyond Code Requirements
Overall Hazard Benefit-Cost Ratio	6:1	4:1
Riverine Flood	7:1	5:1
Hurricane Surge	Too few grants	7:1
Wind	5:1	5:1
Earthquake	3:1	4:1
Wildland-Urban Interface Fire	3:1	4:1

Benefit: $82 billion

65% – Property: $53.0

12% – Additional living expenses & sheltering: $10.0

11% – Insurance: $9.0

6% – Casualties & PTSD: $5.0

6% – Indirect business interruption: $5.0

billions 2016 USD

Cost: ***$11.5 billion***

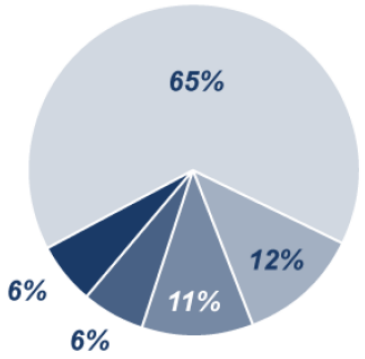


Figure 1. Contribution to benefit from federally funded riverine flood grants.

For Hurricane Surge, Designing to Exceed 2015 Codes Provides $7 Benefit for Each $1 Invested

State	First Floor Height above BFE up to IEMax	BCR
Texas	+2 to 8	20.2 to 9.1
Louisiana	+2 to 10	11.3 to 4.8
Mississippi	+2 to 10	27.6 to 10.1
Alabama	+2 to 10	31.1 to 11.7
Florida	+2 to 10	21.1 to 8.4
Georgia	+2 to 6	6.7 to 3.8
South Carolina	+2 to 10	11.8 to 5.0
North Carolina	+2 to 10	12.6 to 5.2
Virginia	+2 to 6	6.7 to 3.8
Delaware	+2 to 6	6.7 to 3.8
Maryland	+2 to 6	6.7 to 3.8
New Jersey	+2 to 6	6.7 to 3.8
New York	+2 to 6	6.7 to 3.8
Connecticut	+2 to 6	6.7 to 3.8
Rhode Island	+2 to 6	6.7 to 3.8
Massachusetts	+2 to 6	6.9 to 3.9
Total		16.9 to 7

Table 2. BCRs for various heights above BFE for new coastal V-zone buildings up to the point where the incremental benefit remains cost-effective.

No Adverse Impact

No Adverse Impact (NAI) is an approach that ensures that the action of any community or property owner, public or private, does not adversely impact the property and rights of others.





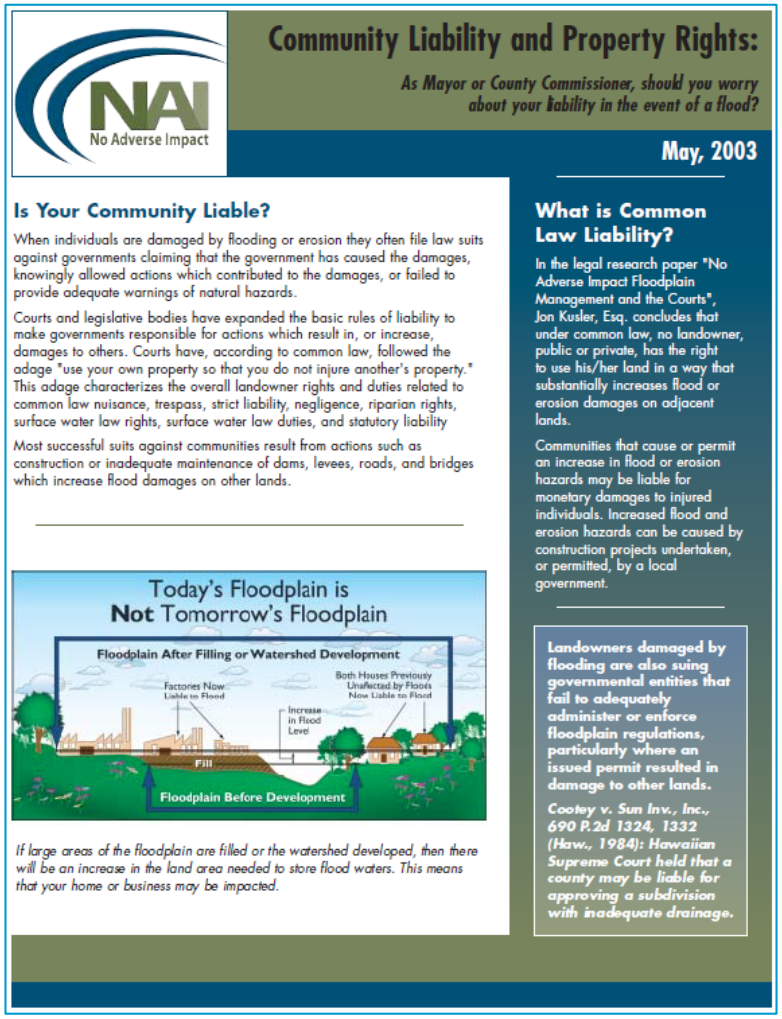
No Adverse Impact

The true strength of the No Adverse Impact approach is that it encourages local decision making to ensure that future development impacts will be identified, considered on a watershed-wide basis and mitigated.



It is a truly comprehensive strategy for reducing flood losses and costs.

NAI Approach Leads to a Process



NAI
No Adverse Impact

Community Liability and Property Rights:

As Mayor or County Commissioner, should you worry about your liability in the event of a flood?

May, 2003

Is Your Community Liable?

When individuals are damaged by flooding or erosion they often file law suits against governments claiming that the government has caused the damages, knowingly allowed actions which contributed to the damages, or failed to provide adequate warnings of natural hazards.

Courts and legislative bodies have expanded the basic rules of liability to make governments responsible for actions which result in, or increase, damages to others. Courts have, according to common law, followed the adage "use your own property so that you do not injure another's property." This adage characterizes the overall landowner rights and duties related to common law nuisance, trespass, strict liability, negligence, riparian rights, surface water law rights, surface water law duties, and statutory liability

Most successful suits against communities result from actions such as construction or inadequate maintenance of dams, levees, roads, and bridges which increase flood damages on other lands.

Today's Floodplain is **Not** Tomorrow's Floodplain

Floodplain After Filling or Watershed Development

Factories Now Liable to Flood

Both Houses Previously Unaffected by Floods Now Liable to Flood

Increase in Flood Level

Fill

Floodplain Before Development

If large areas of the floodplain are filled or the watershed developed, then there will be an increase in the land area needed to store flood waters. This means that your home or business may be impacted.

What is Common Law Liability?

In the legal research paper "No Adverse Impact Floodplain Management and the Courts", Jon Kusler, Esq. concludes that under common law, no landowner, public or private, has the right to use his/her land in a way that substantially increases flood or erosion damages on adjacent lands.

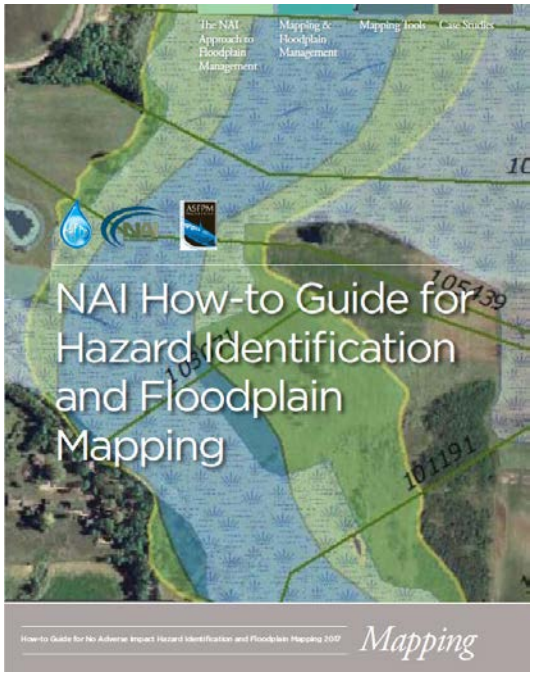
Communities that cause or permit an increase in flood or erosion hazards may be liable for monetary damages to injured individuals. Increased flood and erosion hazards can be caused by construction projects undertaken, or permitted, by a local government.

Landowners damaged by flooding are also suing governmental entities that fail to adequately administer or enforce floodplain regulations, particularly where an issued permit resulted in damage to other lands.

Cootey v. Sun Inv., Inc., 690 P.2d 1324, 1332 (Haw., 1984): Hawaiian Supreme Court held that a county may be liable for approving a subdivision with inadequate drainage.

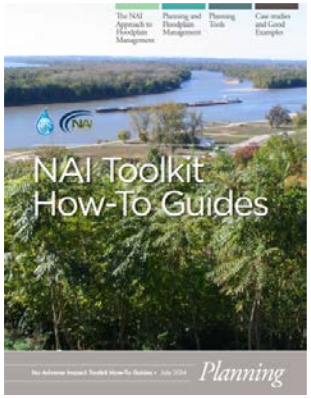
- Legal foundation
- Understandable
- Palatable to Community as a Whole
- Working around the Nation
- Non-Adversarial
  - Not Pro Development
  - Not Anti Development

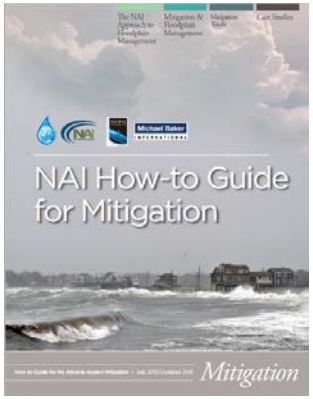
NAI How-To Guides

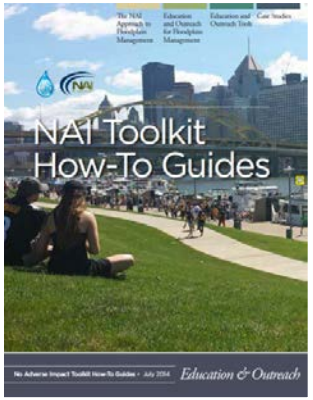


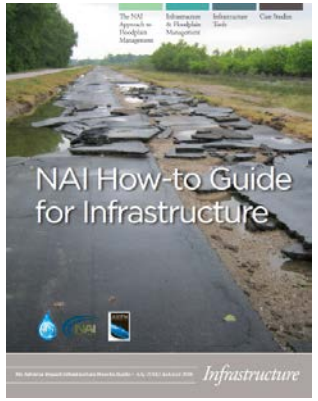
NAI Building Blocks

1. Hazard ID & Mapping…….. Published
2. Education and Outreach…. Published
3. Planning…….. Published
4. Mitigation…….. Published
5. Infrastructure…….. Published
6. Regulations……... Published
7. Emergency Services…… Underway

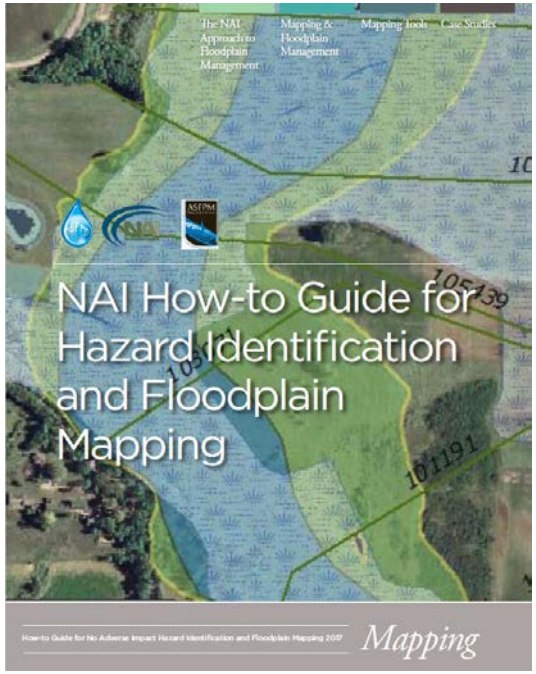








NFIP & Higher Standards



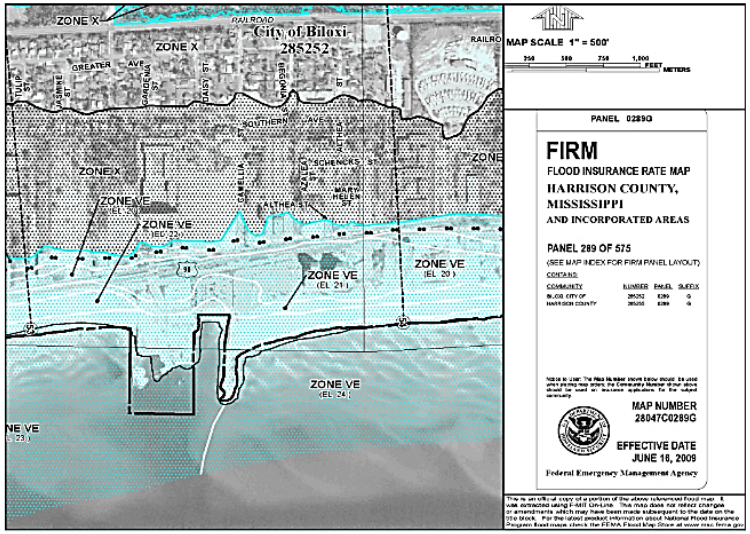
NFIP Guidance on Using NFIP Maps

"…any floodplain management regulations adopted by a state or a community, which are more restrictive than the criteria set forth in this part are encouraged and shall take precedence." 44 CFR 60.1(d)

Hazard Identification

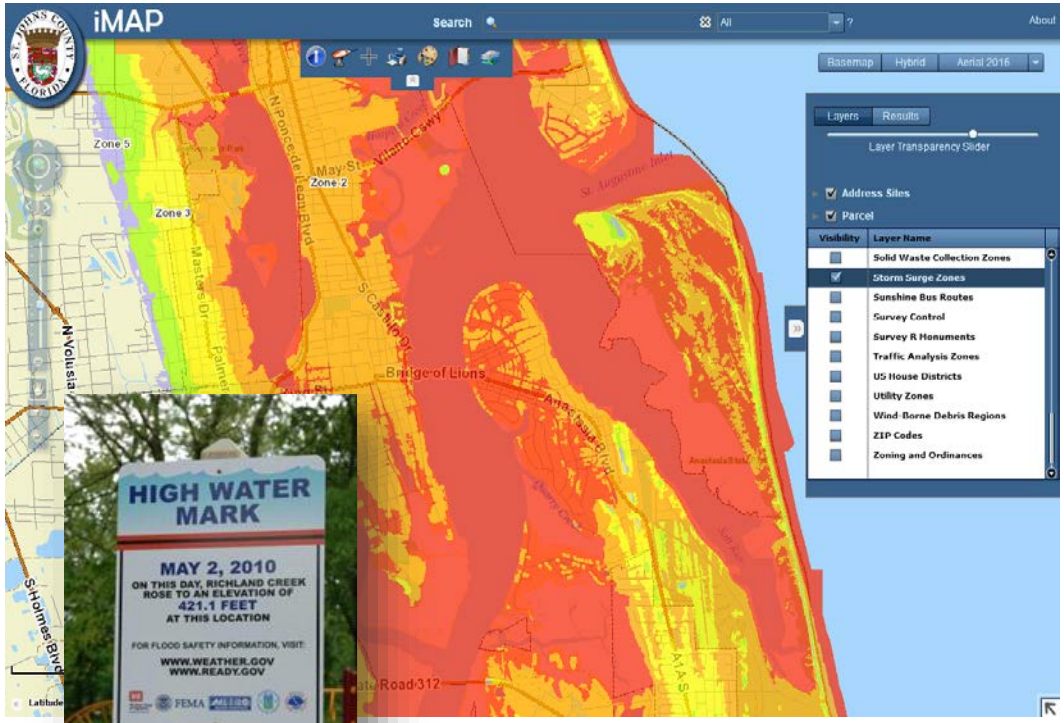
Basic

Flood Insurance Rate Map



Better

Fill in the Gaps

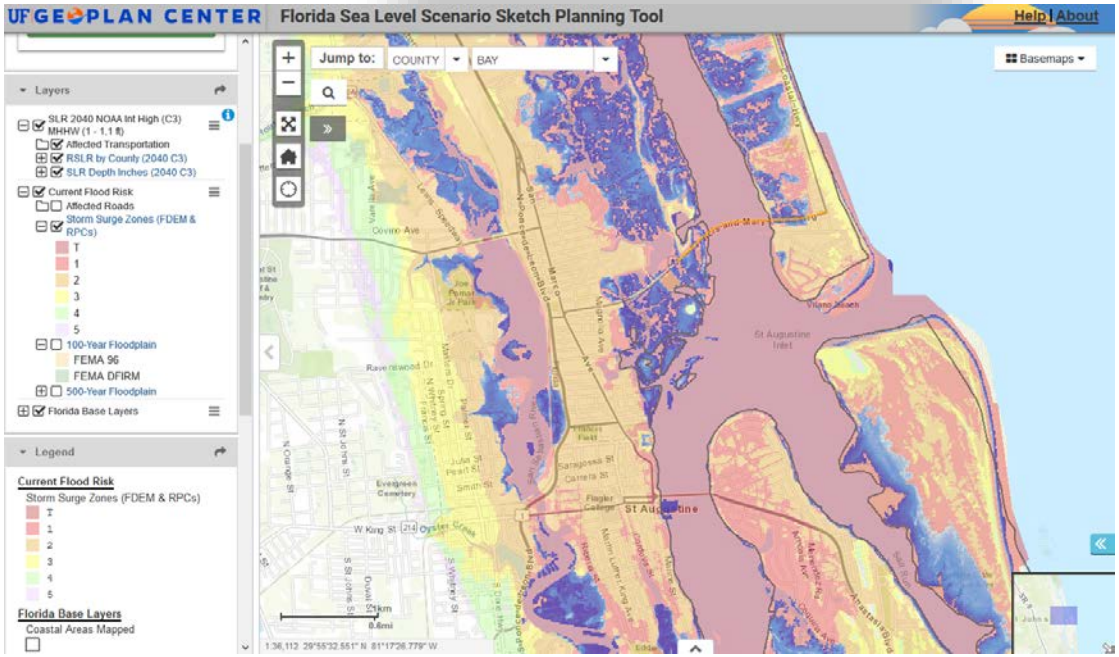


Hazard Identification (continued)

NAI

- *Higher Mapping Standards*
- *Natural & Beneficial Functions*
  - *Identify Sensitive Resources*
- *Future Conditions*
- *Information Sharing*



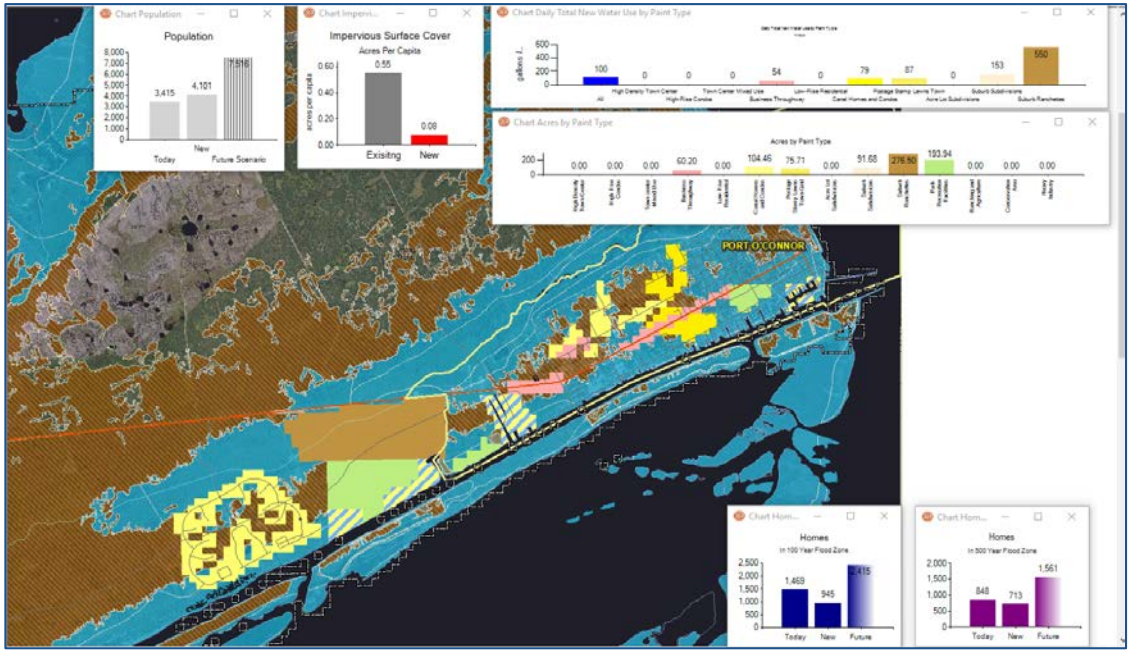


Bringing it all together

Integrating NAI and CHARM



- *Legal foundation*
- *Complete hazard identification*
- *Natural & Beneficial Functions*
- *Future Conditions*
- *Information Sharing*
- *Collaboration*



Thank you

Please, complete an evaluation

All materials will be posted on our website

(Link will be emailed)

Jeff Stone, GISP, CFM
Senior Researcher & GIS Manager
Flood Science Center
Association of State Floodplain Managers
jeff@floods.org

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Flood Resilience Planning in St. Augustine

Todd Grant, P.G.
Public Works Deputy Director
City of St. Augustine, Florida



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Planning for Sea Level Rise in the Matanzas Basin

Kaitlyn Dietz

Coastal Training Program Coordinator

Guana Tolomato Matanzas National Estuarine Research Reserve



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The Law's the Limit: Sea-Level Rise Adaptation and Local Government

Thomas Ruppert, Esquire
Coastal Planning Specialist
Florida Sea Grant



Thomas Ruppert, Esq., coastal planning specialist at the Florida Sea Grant College Program, is a licensed attorney developing legal and policy analysis for local governments on aspects of adaptive planning for sea-level rise, community resilience, and associated long-term challenges and opportunities for Florida's coastal communities. Mr. Ruppert has authored and co-authored numerous legal articles and frequently serves as an invited presenter at events in Florida and in other coastal states. He has worked with over a dozen partners to organize and host legal workshops on coastal issues and flood insurance around the state. Mr. Ruppert is currently involved with several initiatives within Florida communities planning for sea-level rise and maintains a website of original resources at www.flseagrant.org/climatechange/coastalplanning/.

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Adaptation Planning – Ideas from Annapolis

Angela Schedel, Ph.D., P.E.
Director of Community Resilience
Taylor Engineering



Angela Schedel is the Director of Community Resilience at Taylor Engineering in Jacksonville. She is a career Naval Officer, having served 24 years as a helicopter pilot and an engineering professor at the U.S. Naval Academy. Angela grew up in Tampa and has a Bachelor's Degree in Ocean Engineering from the U.S. Naval Academy and a Master's Degree and PhD in Civil Engineering from the University of Maryland. Her doctoral dissertation was on the economic effects of sea level rise. She is passionate about sea level rise and wants to help people think proactively about it, not just react after flood events. She hopes to use her knowledge to improve community's resiliency to coastal flooding. When not in the office, she enjoys being in the great outdoors, and spending time in, under and on the water.

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Peril of Flood and Post-Disaster Redevelopment Plans

Jerry Murphy, JD, AICP, CFM
Resilient Communities Initiative
University of Florida



Mr. Murphy is a certified floodplain manager, certified urban and regional planner, and legal scholar. His work and research focuses on land use planning and control law, community-based planning, code and regulation drafting, floodplain management, infrastructure finance and planning, post-disaster redevelopment planning, community resiliency and sustainability. He currently leads the University of Florida's Resilient Communities Initiative, reaching out to local governments through interlocal agreements to assemble teams of expert faculty, researchers, and student assistants to craft planning solutions to the challenges facing local governments in the 21st Century. He is currently Co-chair of the ASFPM Higher Education Policy Sub-committee and academia representative for the ASFPM Certification Board of Regents (CBOR).

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Community, Health and Resource Management (CHARM) Overview

Steve Mikulencak, AICP
Planning Program Leader
Texas Community Watershed Partners
Texas A&M AgriLife Extension



Steven Mikulencak is an AICP certified planner and Extension Program Specialist for the Texas Community Watershed Partners. He works from Houston, TX and specializes in stakeholder participation and planning tools for local decision-makers. Before joining A&M, he was a consultant working on comprehensive plans, zoning, design guidelines, and GIS analyses for local governments. He now leads AgriLife's FEMA CTP program and develops planning and outreach programs for TX communities, with a focus on risk mitigation through effective long-term planning.

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